

REMARKS

I. Status Of Claims

Claims 27, 34-36, 38, 40, 41, and 48-50 are pending in this application. All claims have been rejected.

II. The Claims Are Not Obvious Under 35 U.S.C. § 103

**A. Claims 27, 34-36, 38, 41, and 48-50
Are Patentable Over Kahn in View of Mullenbach**

Claims 27, 34-36, 38, 41, and 48-50 stand rejected under 35 U.S.C. § 102(b)/103(a) as allegedly unpatentable over Kahn in view of Mullenbach for the reasons set forth in the Office Action of January 21, 1998. (Office Action, page 2.) Applicants respectfully traverse this rejection for the reasons of record and as supplemented with the following new arguments or new evidence, in accordance with the requirements of 37 C.F.R. § 1.114.

The Office admits that Kahn is deficient because Kahn "does not teach glutathione peroxidase as a desired protein, whose encoding DNA could be incorporated into the disclosed adenoviral vectors." (Office Action dated January 21, 1998, page 20.) The Office then alleges that Mullenbach teaches "cDNA sequences of both a bovine and human glutathione peroxidase...and illustrate that glutathione peroxidase is a protein of interest." (*Id.*) The Office then concludes

[I]t would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate cDNA encoding a human or bovine glutathione peroxidase, taught by Mullenbach et al., into the adenoviral vectors and subsequently infected cells taught by Kahn et al. with a reasonable expectation of success **as only routine techniques would be required**, and for the express reason that Kahn et al. taught that **the vectors were useful for recombinant expression of a**

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protein of interest and Mullenbach et al. illustrate that glutathione peroxidase is a protein of interest.

(*Id.*, emphasis added.) Applicants respectfully submit that Kahn and Mullenbach lack the required motivation to combine or modify the cited references to devise the claimed invention. Accordingly, the Office has failed to meet its burden of establishing a *prima facie* case of obviousness.

The Federal Circuit requires a showing of a suggestion or motivation to modify or combine the teachings of prior art references. See, e.g., *In re Dembiczak*, 50 USPQ.2d 1614 (Fed. Cir. 1999). Combining prior art references without evidence of such a suggestion or motivation simply takes the inventor's specification as a blueprint for piecing together the prior art to defeat patentability, i.e., the essence of hindsight. *Dembiczak*, 50 USPQ.2d at 1617. This is why the Federal Circuit placed the burden on the Office to present "clear and **particular**" evidence showing motivation to combine or modify. *Id.* at 1617. Furthermore, the Federal Circuit has also held that

This factual question of motivation is material to patentability, and could not be resolved on **subjective belief and unknown authority**. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to '[use] that which the inventor taught against its teacher.' ... Thus the [Office] must not only assure that the requisite findings are made, based on evidence of record, but must also **explain the reasoning** by which the findings are deemed to support the agency's conclusion.

In re Sang Su Lee, Slip Opinion 00-1158, pages 6-7, citations omitted, emphasis added (Fed. Cir. January 18, 2002.)

In this application, Kahn and Mullenbach do not teach or suggest incorporating a nucleic acid encoding glutathione peroxidase into the claimed adenoviral vector, as

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is alleged by the Office. In support of it's rejection, the Office concludes that Kahn's "vectors were useful for recombinant expression of a protein of interest and Mullenbach et al. illustrate that glutathione peroxidase is a protein of interest."

Applicants submit that the evidence relied upon by the Office for showing motivation to modify or combine Kahn *and* Mullenbach to incorporate a nucleic acid encoding glutathione peroxidase into Kahn's adenoviral vectors is apparently based only on subjective belief or unknown authority. The Office's conclusory suggestion that Kahn's vectors are useful for expressing a protein of interest and that Mullenbach describes glutathione peroxidase as a protein of interest is apparently not supported with additional reasoning. As in *Sang Su Lee*, the Office has failed to present "clear and **particular**" evidence showing motivation to combine or modify as is required in *Dembiczak*, nor provided a **reasoned explanation** as required in *Sang Su Lee*. Thus, the evidence relied upon by the Office does not provide the requisite motivation for one of ordinary skill in the art to devise the Office's proposed modification or combination of Kahn *and* Mullenbach. Therefore, the Office has failed to establish a *prima facie* case of obviousness.

Furthermore, in further support of it's rejection, the Office alleges that there would be "a reasonable expectation of success **as only routine techniques would be required.**" (*Id.*) While a person of ordinary skill in the art may possess the requisite knowledge and ability to modify the protocol taught by the cited references, the modification is not obvious unless the prior art suggested the desirability of the modification. *In re Gordon*, 211 USPQ 1125, 1127 (Fed. Cir. 1984.) Applicants submit that whether or not the claimed invention could be devised using only routine

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techniques is not relevant because the Office has not shown the desirability of modifying or combining the cited references.

Accordingly, Applicants respectfully request that the Office reconsider and withdraw the rejection.

**B. Claims 27, 34-36, 40, 41, and 48-50
Are Patentable Over McClelland in View of Mullenbach**

Claims 27, 34-36, 40, 41, and 48-50 stand rejected under 35 U.S.C. § 102(e)/103(a) as allegedly unpatentable over McClelland in view of Mullenbach for the reasons set forth in the Office Action of January 21, 1998. (Office Action, page 2.) Applicants respectfully traverse this rejection for the reasons of record and as supplemented herein.

The Office admits that McClelland is deficient because McClelland "does not teach that glutathione peroxidase is a protein of interest." (Office Action dated January 21, 1998, page 21.) The Office then alleges that Mullenbach teaches "cDNA sequences of both a bovine and human glutathione peroxidase...and illustrate that glutathione peroxidase is a protein of interest." (*Id.*) The Office then reaches the same conclusion as found for Kahn and Mullenbach, that It would have been obvious to one of ordinary skill in the art at the time the invention was made to devise the claimed invention "with a reasonable expectation of success as only routine techniques would be required, and for the express reason that McClelland et al. taught that **the vectors were useful for recombinant expression of a protein of interest** and Mullenbach et al. illustrate that glutathione peroxidase is a protein of interest." (*Id.*, emphasis added.) Applicants respectfully submit that McClelland and

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Mullenbach lack the required motivation to combine or modify the cited references to devise the claimed invention. Accordingly, the Office has failed to meet it's burden of establishing a *prima facie* case of obviousness.

As discussed above, the Federal Circuit placed the burden on the Office to present "clear and **particular**" evidence showing motivation to combine or modify. *In re Dembiczak*, 50 USPQ.2d 1614, 1617 (Fed. Cir. 1999.) Furthermore, the Federal Circuit has also held that the "factual question of motivation...could not be resolved on **subjective belief and unknown authority**...but must also **explain the reasoning** by which the findings are deemed to support the agency's conclusion." *In re Sang Su Lee*, Slip Opinion 00-1158, pages 6-7, citations omitted, emphasis added (Fed. Cir. January 18, 2002.)

As in the rejection over Kahn and Mullenbach, Applicants submit that the evidence relied upon by the Office for showing motivation to modify or combine McClelland *and* Mullenbach to incorporate a nucleic acid encoding glutathione peroxidase into McClelland's adenoviral vectors is apparently based only on subjective belief or unknown authority. The Office's conclusory suggestion that McClelland's vectors are useful for expressing a protein of interest and that Mullenbach describes glutathione peroxidase as a protein of interest is apparently not supported with additional reasoning. As in *Sang Su Lee*, beyond the conclusory statements of record, the Office in the present application fails to explain the reasoning supporting it's conclusion that one of ordinary skill in the art would be motivated to combine McClelland *and* Mullenbach to devise the specific present claimed invention. The Office has failed to present "clear and **particular**" evidence

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showing motivation to combine or modify as is required in *Dembiczak*, nor provided a **reasoned explanation** as required in *Sang Su Lee*. Thus, the evidence relied upon by the Office does not provide the requisite motivation for one of ordinary skill in the art to devise the Office's proposed modification or combination of McClelland and Mullenbach. Therefore, the Office has failed to establish a *prima facie* case of obviousness.

Furthermore, in further support of its rejection, the Office alleges that there would be "a reasonable expectation of success **as only routine techniques would be required.**" (*Id.*) Applicants submit that whether or not the claimed invention could be devised using only routine techniques is not relevant because the Office has not shown the desirability of modifying or combining the cited references. See *In re Gordon*, 211 USPQ 1125, 1127 (Fed. Cir. 1984.)

Accordingly, Applicants respectfully request that the Office reconsider and withdraw the rejection.

**C. Claims 36, 38 and 50 Are Patentable Over
McClelland and Mullenbach in view of Akli**

Claims 36-38 and 50 stand rejected under 35 U.S.C. § 102(e)/103(a) as allegedly unpatentable as obvious over McClelland and Mullenbach for the reasons given above, and further in view of Akli. (Office Action, page 3.) The arguments traversing obviousness over Kahn or McClelland in view of Mullenbach are herein incorporated by reference and applied to the Applicants' traversal of obviousness over Kahn and McClelland and further in view of Akli. Applicants traverse for the reasons of record, as well as those reasons discussed above.

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The Office has stated that this combination of references does not "teach that the DNA of interest could be operably linked to the RSV-LTR promoter or that glial cells could be infected. (Office action mailed January 21, 1998, page 22.) To fill this gap, Akli is cited. (*Id.*) Akli, however, does not cure the deficiencies in the teachings of McClelland and Mullenbach.

As discussed by Applicants, the Office has not proffered any clear and particular evidence that one of ordinary skill in the art would have been motivated to combine the teachings of McClelland and Mullenbach. Akli does not provide this motivation. Akli, according to the Office, merely teaches the use of an RSV-LTR promoter in adenoviral constructs and infection of glial cells by recombinant adenovirus. Hence, for the reasons set forth above, the claims are not *prima facie* obvious over the combined teaching of McClelland, Mullenbach, and Akli. Applicants request reconsideration and withdrawal of the rejection.

SUMMARY


In view of the above remarks, Applicants submit that this application is in condition for allowance. An early and favorable action is earnestly solicited.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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